

6CL6
Description and Rating
PENTODE

The 6CL6 is a miniature power pentode designed primarily for use as the video output amplifier in television receivers. The tube exhibits high transconductance, high power sensitivity, and low interelectrode capacitances. These characteristics make the 6CL6 suitable for driving large television picture tubes at low distortion levels. The tube is also useful as a wide-band amplifier in industrial and laboratory equipment.

GENERAL

Cathode - Coated Unipotential

Heater Voltage, A-C or D-C	6.3	Volts
Heater Current	0.65	Ampere

Envelope - T-6½, Glass
Base - E9-1, Small Button 9-Pin
Mounting Position - Any

Direct Interelectrode Capacitances*

Grid-Number 1 to Plate, maximum	0.12	μμf
Input	11	μμf
Output	5.5	μμf

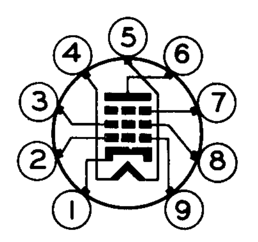
MAXIMUM RATINGS

DESIGN-CENTER VALUES

Plate-Supply Voltage	300	Volts
Plate Voltage	300	Volts
Suppressor Voltage	0	Volts
Screen-Supply Voltage	300	Volts
Screen Voltage - See Screen Rating Chart		
Positive D-C Grid-Number 1 Voltage	0	Volts
Negative D-C Grid-Number 1 Voltage	50	Volts
Plate Dissipation	7.5	Watts
Screen Dissipation	1.7	Watts
Heater-Cathode Voltage		
Heater Positive with Respect to Cathode	90	Volts
Heater Negative with Respect to Cathode	90	Volts
Grid-Number 1 Circuit Resistance		
With Fixed Bias	0.1	Megohm
With Cathode Bias	0.5	Megohm
Bulb Temperature at Hottest Point	+200	Centigrade

* *Without external shield.*

BASING DIAGRAM

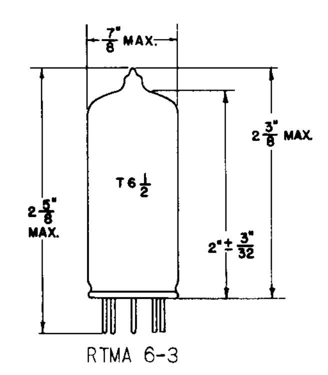


RTMA 9BV
BOTTOM VIEW

TERMINAL CONNECTIONS

Pin 1 - Cathode
Pin 2 - Grid Number 1
Pin 3 - Grid Number 2 (Screen)
Pin 4 - Heater
Pin 5 - Heater
Pin 6 - Plate
Pin 7 - Internal Shield and Grid Number 3 (Suppressor)
Pin 8 - Grid Number 2 (Screen)
Pin 9 - Grid Number 1

PHYSICAL DIMENSIONS



RTMA 6-3

Supersedes ET-T811 dated 2-53

CHARACTERISTICS AND TYPICAL OPERATION

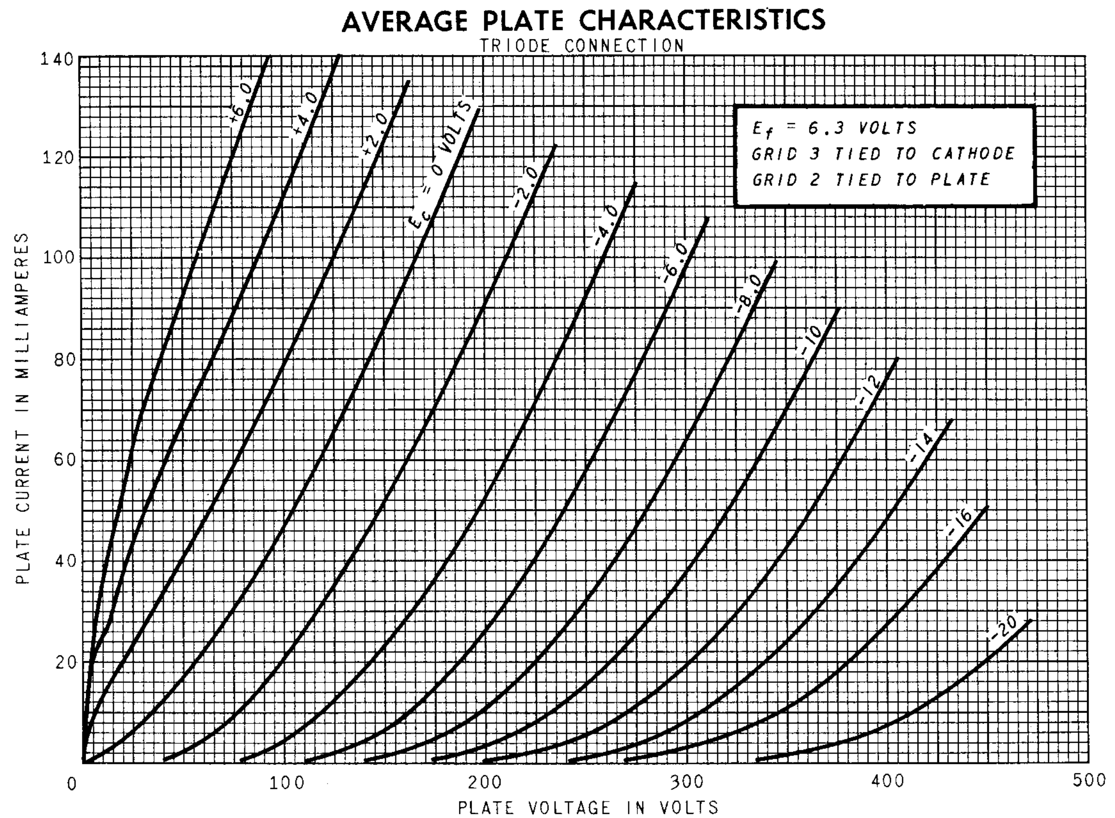
CLASS A_1 AMPLIFIER

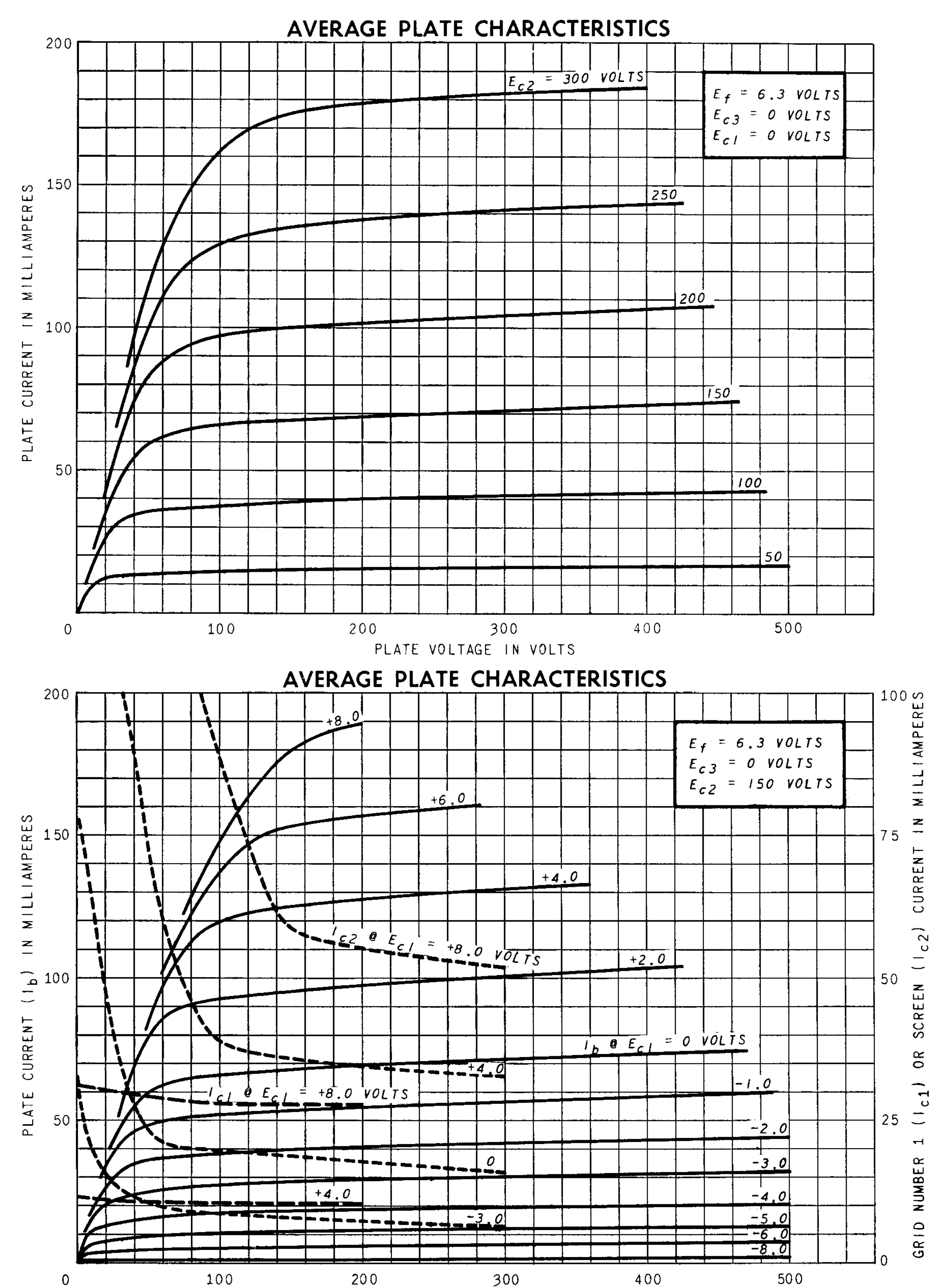
Plate Voltage	250	Volts
Suppressor - Connected to Cathode at Socket		
Screen Voltage	150	Volts
Grid-Number 1 Voltage	-3.0	Volts
Peak AF Grid-Number 1 Voltage	3.0	Volts
Plate Resistance, approximate	150000	Ohms
Transconductance	11000	Micromhos
Zero-Signal Plate Current	30	Milliamperes
Maximum-Signal Plate Current	31	Milliamperes
Zero-Signal Screen Current	7.0	Milliamperes
Maximum-Signal Screen Current	7.2	Milliamperes
Load Resistance	7500	Ohms
Total Harmonic Distortion, approximate	8	Percent
Maximum-Signal Power Output	2.8	Watts
Grid-Number 1 Voltage, approximate, I_b = 10 Microamperes	-14	Volts

VIDEO AMPLIFIER, 4 MEGACYCLE BANDWIDTH

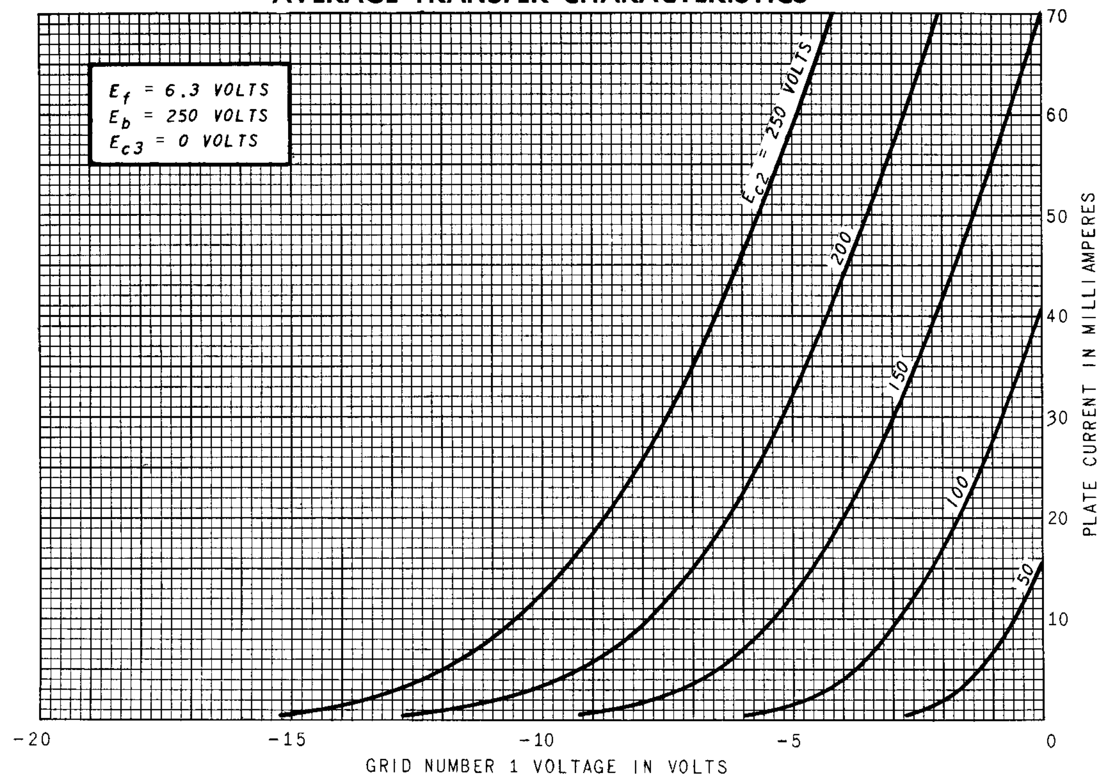
Plate-Supply Voltage	300	Volts
Suppressor - Connected to Cathode at Socket		
Screen-Supply Voltage	300	Volts
Screen Resistor	24000	Ohms
Grid-Number 1 Voltage	-2	Volts
Grid-Number 1 Resistance	0.1	Megohm
Grid-Number 1 Signal Voltage, Peak-to-Peak	3.0	Volts
Zero-Signal Plate Current	30	Milliamperes
Zero-Signal Screen Current	7.0	Milliamperes
Load Resistance	3900	Ohms
Voltage Output, Peak-to-Peak	132	Volts

AVERAGE PLATE CHARACTERISTICS

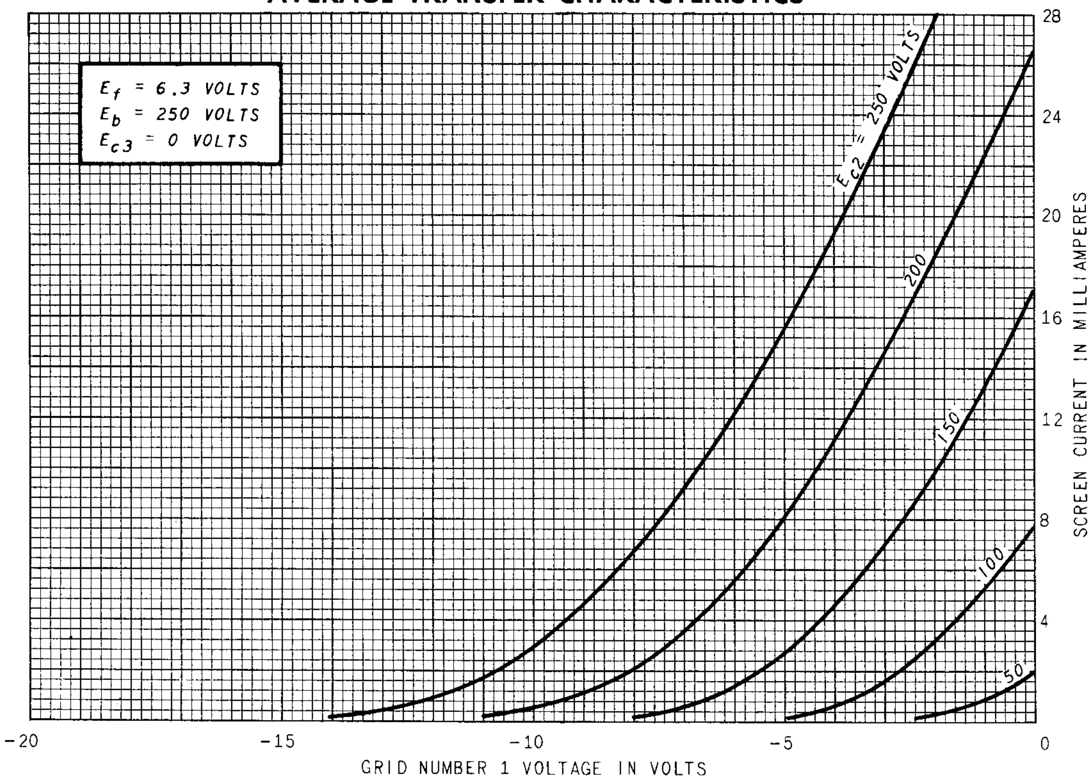



AVERAGE PLATE CHARACTERISTICS
Ef = 6.3 VOLTS
Ec3 = 0 VOLTS
Ec1 = 0 VOLTS
Ec2 = 300 VOLTS
250
200
150
100
50
PLATE CURRENT IN MILLIAMPERES
PLATE VOLTAGE IN VOLTS
AVERAGE PLATE CHARACTERISTICS
Ef = 6.3 VOLTS
Ec3 = 0 VOLTS
Ec2 = 150 VOLTS
+8.0
+6.0
+4.0
+2.0
Ic2 @ Ec1 = +8.0 VOLTS
Ib @ Ec1 = 0 VOLTS
Ic1 @ Ec1 = +8.0 VOLTS
-1.0
-2.0
-3.0
-4.0
-5.0
-6.0
-8.0
PLATE CURRENT (Ib) IN MILLIAMPERES
GRID NUMBER 1 (Ic1) OR SCREEN (Ic2) CURRENT IN MILLIAMPERES
PLATE VOLTAGE IN VOLTS

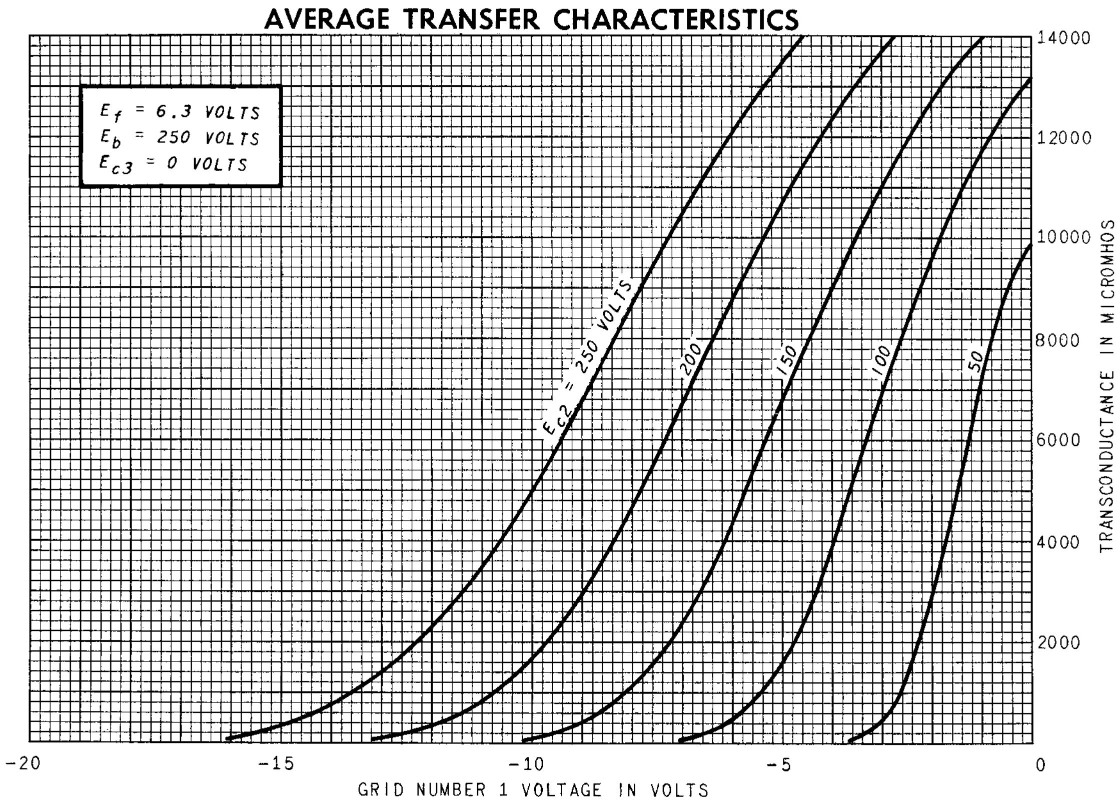
AVERAGE TRANSFER CHARACTERISTICS



AVERAGE TRANSFER CHARACTERISTICS



AVERAGE TRANSFER CHARACTERISTICS



SCREEN RATING CHART

